

Decision Memo

HERMIT LAKE (TUCKERMAN RAVINE) POTABLE WATER SYSTEM PROJECT SARGENTS PURCHASE COOS COUNTY, NEW HAMPSHIRE

USDA Forest Service
Androscoggin Ranger District
White Mountain National Forest
300 Glen Road, Gorham, NH 03581

Background

The Androscoggin Ranger District proposes to install a water system at the Hermit Lake area (Tuckerman Ravine), Sargents Purchase, New Hampshire, to provide visitors and staff with year-round potable water that meets Safe Drinking Water Standards.

Located 2.4 miles from Highway 16 and ½ mile below Tuckerman Ravine, the Hermit Lake area is occupied year-round. Facilities consist of a Forest Service snow rangers' cabin, an Appalachian Mountain Club caretaker's cabin, a Mount Washington Volunteer Ski Patrol cabin, winter vault and summer flush toilet facilities, eight open-front shelters, three tent platforms, two barrel pit toilets, a shed, and a generator house. The USDA Forest Service owns all facilities.

An estimated 75,000 people pass through the Hermit Lake area on a yearly basis. Up to 90 campers per night stay at open front shelters and tent platforms. A caretaker is present on a year-round basis with additional volunteers and staff staying at Hermit Lake during the busy spring and summer seasons. A safe drinking water supply would serve visitors and administrative staff.

Purpose and Need

The Safe Drinking Water Act (SDWA) authorizes the Environmental Protection Agency (EPA) to develop regulations to ensure drinking water safety. The EPA delegates authority to enforce drinking water regulations to state governments. Forest Service water systems must comply with all Federal and State regulations. The SDWA defines any system capable of serving more than 25 people for 60 days to be a public water system. The Hermit Lake area fits this definition. The current water system at the Hermit Lake area does not comply with the SDWA.

The present water source is from the nearby Cutler River. In summer, water is drawn from just below the Little Headwall in Tuckerman Ravine and distributed through a 2-inch on-the-ground plastic line to two storage tanks. Until recently, a portion of the water was treated with chlorine and then distributed to faucets available to the public. This system was disconnected in 2001 because it did not comply with standards for the SDWA. Because of the long-standing use of existing facilities, visitors at Hermit Lake expect potable water. Currently, water running to the snow rangers' quarters, the caretaker's cabin, and the flush toilets is not treated. In winter, the flush toilet and drinking water distribution system described above is shut down and dismantled. Visitors and staff hike to the Cutler River to draw water directly from the stream.

Decision

It is my decision to replace the existing water system at Hermit Lake with a year-round potable water system that meets Safe Drinking Water Standards and provides water to the Forest Service snow rangers' cabin, the Appalachian Mountain Club caretaker's cabin and to a public water supply source at a central location within the Hermit Lake complex.

The components of this decision include the following elements:

- Drill a bedrock well, install an appropriate pump in the well to handle site needs, and install pump controls and pressure tank in the basement of the caretaker's cabin;
- Replace an existing 2-inch plastic water line from a point below the Little Headwall to the AMC caretaker's cabin with a 4-inch plastic line; install a hydropower system using a micro-turbine in that line to be the primary power source for the pump;
- Install a year-round distribution system for the snow rangers' cabin, caretaker's cabin, and public water supply;
- Upgrade propane generator (used as back-up) to meet pump specifications and retrofit the existing generator building to meet safety requirements.

My reasons for making this decision follow. I will address each of the four elements.

I have decided to drill a well instead of using a surface water system. Information available indicates a very high probability for finding good water in a well. A surface water system would have required water treatment. Although technology currently exists that meets the need and is not very costly, it requires hauling rock salt for the chlorinator and would be more labor intensive than a well. The drilling site will be north of the caretaker's cabin. I originally proposed drilling in the courtyard area but we have learned of several gray water discharge areas in this vicinity and we need to move the drill site to meet the minimum distance requirements from known possible contamination sources. Drilling equipment will travel the Sherburne trail to gain access to the Hermit Lake area. Some material and equipment may be airlifted using helicopters. Incidental ATV traffic will also be allowed on the Sherburne trail to transport workers to the site but construction employees will be expected to stay at Hermit Lake and not be using motorized vehicles for access on a daily basis.

The pump for the well will require a power source for operation. The scoping letter asked for thoughts for a hydropower source and solar power. Some people preferred solar power; however, I have decided to install a hydropower system using a micro-turbine installed in a four-inch water line. The old surface water system used a two-inch plastic line lying on top of the ground to transfer water from the Little Headwall to the storage tanks near the caretaker's cabin. That line will be removed and replaced with a new four-inch line on the same location. Solar power was determined to be less efficient than this hydropower system because of the terrain and weather. Hermit Lake does not have many cloud free days. For many months, the sun angle is too low to offer much generating capacity because of the height of Boott Spur. The area also experiences frequent times when rime ice builds on exposed structures. The best location for a solar panel would be on the roof of one of the buildings, probably the caretaker's. Icing would require employees to get on the roof and scrape the panel. Snow would also need to be shoveled to keep the panel functional. Installation of the hydropower system reduces employee risk. A

suggestion for using wind was offered during scoping. Although wind is certainly plentiful and reliable at this location and wind is used successfully at other locations in the White Mountains, I am not implementing wind power for aesthetic and noise reasons.

I have decided to provide a year-round water distribution system to reduce health risks for employees. The Hermit Lake caretaker is needed on site year-round. Snow rangers and backcountry rangers also are at the site on a frequent basis with snow rangers being present daily during avalanche forecasting season. Water has historically been provided for employees and the public at the site. Once the water system is installed for employees, there is insignificant additional cost associated with providing a potable water source for public use so I have decided to include that aspect within my decision. The water distribution lines will need to be buried from six to eight feet deep to get below frost depth. As with the well drilling operation, workers for the water distribution system will use the Sherburne trail and will stay on site rather than use motorized equipment for travel on a daily basis. An excavator will be needed to dig trenches for the water lines and this equipment will use the Sherburne trail for access.

The final element of the decision is related to the existing propane generator located near the snow rangers' cabin. I originally thought we could remove the generator when we established an alternative power source but that is not reasonable at this time and I have decided to keep the propane generator option as a backup power source. The generator is situated below ground level within a small building. This helps with reducing sound but ventilation does not meet health and safety standards. The hydropower system may not be usable year-round because the four-inch water line will be on the surface and may freeze. Therefore, I have decided to mitigate the ventilation hazard with the existing generator. This may require that we elevate the generator above ground. To mitigate increased sound from that action, we will insulate the building to reduce noise. Also, since we have not yet drilled the well, we are unsure of the amount of power that will be needed to operate the pump and distribution system. The existing generator may not be large enough to operate the system if the hydropower source cannot be used. Once well information is known, it may be necessary to replace the existing propane generator with a larger model. If this is needed, the old one will be removed from the site and the generator building will be enlarged to accommodate the new equipment.

The following restrictions are also included in my decision.

- Minimize use of motorized equipment during the snow free period on the Sherburne trail above the snow rangers' cabin. The exception may be for transport of the four-inch water line to the vicinity of the water intake below the Little Headwall.
- Keep construction equipment on designated trails in the courtyard of the Hermit Lake area to minimize impact to vegetation.
- Do not disturb the riparian and surrounding open areas around the pond to the west of the snow rangers' cabin and along Cutler River.
- Minimize use of helicopters during breeding season (June through August).
- Whenever possible consistent with safety needs, maintain helicopter cruising altitudes of more than 100 feet above the forest canopy. Use a minimum 100-foot line for sling loads delivering supplies and equipment to Hermit Lake.

This action is categorically excluded from documentation in an environmental impact statement or an environmental assessment because it meets the intent of direction from the Chief of the Forest Service as described in Forest Service Handbook (FSH) 1909.15, 31.1b, section (5) “Repair and maintenance of recreation sites and facilities.

Our analysis shows no extraordinary circumstances that will cause significant effects to the environment from this project. Extraordinary circumstances include steep slopes or highly erosive soils; threatened or endangered species and their critical habitat; floodplains, wetlands, municipal watersheds; Congressionally designated areas such as Wilderness; inventoried roadless areas; Research Natural Areas; and cultural resource sites.

The categorical exclusion is appropriate in this situation because there are no extraordinary circumstances associated with resources in the project area that would cause any significant effects to the environment. As described further in this document, I considered public comments raised during scoping for this project and have explained why there is no potential for significant effects.

The following is a summary of our environmental analysis and resource conditions (FSH 1901.15 Chapter 30.3, Interim Directive August 23, 2002).

- Steep slopes or highly erosive soils. There are steep slopes on the south side of the Cutler River from below the Little Headwall to the courtyard area near the cabins. No equipment will be operated nor will any ground disturbance occur in this area. For the areas where drilling or excavation will occur, no unusual soil types exist that would result in erosion that cannot be minimized through implementation of Forest Plan standards and guidelines.
- Federally listed threatened or endangered species or designated critical habitat, species proposed for federal listing or proposed critical habitat, or Forest Service sensitive species. It was determined this project would have no effect on gray wolf or eastern cougar. The project will not affect Canada lynx and is consistent with the Conservation Measures outlined in the Canada Lynx Conservation Assessment (United States Forest Service (USFS) 2000). It also was determined this project will not affect Indiana bat and is consistent with the Terms and Conditions outlined in the Biological Opinion (United States Fish and Wildlife Service (USFWS) 2000) (Biological Evaluation in Project File).

The project is not likely to cause a trend toward federal listing or loss of viability for the following Regional Forester sensitive species that are present or likely to be present in the analysis area: arnica, mountain avens, wavy bluegrass, northern commandra, lily-leaved twayblade, or heartleaf twayblade. The same determination was made for Bicknell’s thrush, eastern small-footed myotis, and northern bog lemming.

- Floodplains, wetlands, or municipal watersheds. This decision includes activities in the riparian area for the Cutler River. The riparian area includes the floodplain and associated wetlands near the snow rangers’ cabin. During a field visit it was noted the riparian and floodplain areas appear to be properly functioning. General direction in the Forest Plan for floodplains and wetland protection is related to Executive Orders on floodplains (11988) and wetlands (11990). These Executive Orders state that construction or rehabilitation of structures and facilities in riparian areas will be designed to maintain or enhance the

beneficial value of floodplains and wetlands and minimize the risk of investment loss by flood proofing or modifying the structure or facility. No construction will occur within the wetland and a minor trench will be excavated to the floodplain for the Cutler River for the hydropower micro-turbine outflow.

The proposed action will not result in degradation to the floodplain, associated wetlands, or riparian area. Short-term effects will quickly be restored through mitigation during and after project implementation.

The project is not within a municipal watershed and will not affect any municipal watershed.

- Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas. The project is not located within a designated Wilderness or Wilderness Study Area. The nearest Wilderness Area is the Great Gulf Wilderness Area (Map of Wilderness Areas on the White Mountain National Forest in Project File). There are no National Recreation Areas on the White Mountain National Forest. This project will not affect congressionally designated areas.
- Inventoried roadless areas. The project is not within an inventoried roadless area. The closest inventoried roadless area is The Great Gulf Wilderness Inventoried Roadless Area, which is located north of the project area while the Dry River Wilderness Inventoried Roadless Area is located west of the project area. The project will not affect inventoried roadless areas.
- Research natural areas. The project area is not within a Research Natural Area (map of research natural areas in Project File). The project will not affect research natural areas.
- American Indian religious or cultural sites; archeological sites or historic properties or areas. There are two previously surveyed cultural resource sites in the vicinity of the project area. Implementation of this project will avoid disturbance of these sites. A project specific cultural resource survey was conducted and no new sites were found. There are no known Native American religious sites or historic buildings within the analysis area. (Heritage Resource Reconnaissance Report in Project File).

Public Involvement

This project was first listed in the White Mountain National Forest Quarterly Schedule of Proposed Actions on October 1, 2001. It has been listed in all subsequent editions. A public involvement (scoping) letter was mailed from the Androscoggin Ranger District to 272 people on September 17, 2001. The scoping letter also was posted on the White Mountain National Forest web page. A list of those contacted through the scoping process can be found in the Project File. The letter described the proposed project and requested comments and concerns from the public. The list included individuals and groups who are interested in recreation activities on the Androscoggin Ranger District and/or the White Mountain National Forest.

We received twenty-one responses to the scoping letter. The majority of respondents support the idea of providing a potable water system at Hermit Lake, and offered opinions and advice on various options and configurations for the system. All responses are in the project file.

Several respondents support potable water for use by snow rangers, caretakers, and volunteers, but oppose providing potable water to visitors, stating that visitors to the backcountry should bring their own water. Two respondents oppose any potable water system and suggest that the facilities at Hermit Lake be scaled back or eliminated altogether.

Tuckerman Ravine and the camping facilities at Hermit Lake have been high-use destinations for decades, attracting thousands of visitors throughout the year. Because the allure of Tuckerman Ravine will not diminish, the Forest Service must continue to manage the use to protect natural resources while providing a reasonable level of service for the public. The Hermit Lake shelters are essential for concentrating use, thus promoting resource protection in the alpine area where camping is heavily restricted. The facility is considered a reasonable level of service for campers who might otherwise scatter throughout the fragile alpine area. Providing potable water for visitors to the Hermit Lake area is a service provided for many years and is consistent with other camping areas in the White Mountain National Forest. To provide water to administrative staff and not make it available to the public seems unreasonable and adverse to public safety.

Water Source: Of those commenting on water sources, most respondents favored drilling a well, with one person recommending a small surface system and one suggesting a dug well.

Power Source: Of those commenting on power sources, most preferred solar panels. One suggested solar with a wind backup, and one person opposed wind power.

Some respondents stated that solar panels would not be visually objectionable because of the development level already existing at Hermit Lake. Two respondents opposed solar panels, one citing the visual impacts and the other citing inefficiency due to a shortage of sunny days.

One respondent preferred a small hydroelectric system, and one suggested that we pressurize the well to eliminate the need for powering a pump. One respondent commented that we should not consider running electrical power from Route 16. This is not being considered due to the expense and environmental effects of burying a power line up the mountain.

Water Transport: Of the three respondents commenting on the distribution system, all support burying the pipes to avoid freezing.

Findings Required by Other Laws

This decision is consistent with the Land and Resource Management Plan for the White Mountain National Forest as required by the National Forest Management Act. The project was designed in conformance with forest plan standards and incorporates appropriate Forest Plan guidelines for Management Area 8.1 (Forest Plan, pages III-64 to III-65) that states in part to “provide facilities to prevent site deterioration and protect the user from health and safety hazards”.

Hermit Lake Shelter area is located in Management Area 8.1 – Scenic Areas as designated in the White Mountain National Forest Land and Resource Management Plan. Management guidelines for recreation in this area include: providing facilities to prevent site deterioration and protect the user from health and safety hazards. Providing a water system, which meets Safe Drinking Water Act guidelines is consistent with the above management direction.

Implementation Date

This project will be implemented on or after the spring skiing season in 2003. This is likely to occur by mid June.

Administrative Review or Appeal Opportunities

This decision is not subject to administrative appeal.

Contact Person

For further information on the decision contact Don Muise, Assistant Ranger for Recreation at 603-466-2713 (ext. 214), TTY number, 603-466-2856 or Pat Nasta at 603-466-2713 (ext. 222).

George R. Pozzuto

12/5/2002

GEORGE R. POZZUTO
District Ranger

Date

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